Perceived helpfulness of treatment for posttraumatic stress disorder: Findings from the World Mental Health Surveys

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Running head: Perceived helpfulness of PTSD treatment

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ABSTRACT

Background: Perceived helpfulness of treatment is an important healthcare quality indicator. We examine probability and predictors of the two key components of this indicator for post-traumatic stress disorder (PTSD).

Methods: Data come from World Mental Health surveys in 21 countries. Respondents who ever sought PTSD treatment (n=882) were asked if treatment was ever helpful and, if so, the number of professionals they had to see to obtain helpful treatment. Patients whose treatment was never helpful were asked how many professionals they saw. Parallel survival models were estimated for obtaining helpful treatment and persisting in help-seeking after earlier unhelpful treatments.

Results: 52.8% of patients eventually received helpful treatment, but survival analysis suggests that 95.5% would have received helpful treatment if all patients persisted with up to five professionals after earlier unhelpful treatment. Only an estimated 23.1% of patients would persist to that extent. Odds of treatment being helpful were positively associated with pharmacotherapy provided by a mental health professional, short delays in help-seeking, absence of prior comorbid anxiety disorders, and absence of childhood adversities. These predictors differed in relative importance in predicting helpfulness of particular treatment encounters and persistence after earlier unhelpful treatment encounters.

Conclusions and Relevance: Most PTSD treatment seekers will eventually receive treatment they consider helpful if they persist in seeking help after initially unhelpful encounters, but this might require seeing up to five professionals. The vast majority of patients who initially receive unhelpful treatment give up well before this point.

Keywords: Pathways to treatment, PTSD, treatment quality, treatment satisfaction

INTRODUCTION

The World Mental Health (WMH) survey initiative has significantly advanced our understanding of the global epidemiology of trauma and posttraumatic stress disorder (PTSD) (Bromet, Karam, Koenen, & Stein, 2018). WMH data were collected from more than 20 countries using coordinated, rigorous, and innovative interviewing methods to comprise the largest cross-national dataset on trauma and PTSD to date. The surveys have delineated rates of and risk factors for exposure to traumatic events (Benjet et al., 2016) and subsequent PTSD (Kessler et al., 2017), have clarified secondary psychiatric and medical morbidities (Kessler et al., 2011; Scott et al., 2016) as well as burden of disease (Kessler, Aguilar-Gaxiola, Alonso, Lee, & Koenen, 2018), and have provided data on health services use for PTSD in different contexts (Thornicroft et al., 2018). WMH data have also been used to address several clinical questions, such as optimal diagnostic criteria and identification of those at risk for PTSD (Karam et al., 2010; Stein et al., 2013; Stein et al., 2014).

Nevertheless, several epidemiological and clinical aspects of the treatment of PTSD deserve further attention. First, relatively little has been written about the perceived helpfulness of PTSD treatment (e.g., Cooper et al., 2017; Starzynski & Ullman, 2014). With increased focus on the lived experience of individuals suffering from mental disorders and on patient-centered care (Bellamy et al., 2016), this is a key gap. Second, there are few data on the longitudinal course of PTSD treatment, including data on perceived helpfulness over time, or data on persistence with treatment. Such data may be useful in informing clinical treatment guidelines, which are currently mainly based on randomized trials in highly controlled settings (explanatory designs) rather than on sequential investigations in everyday contexts (pragmatic designs) (Fagiolini et al., 2017; Janiaud, Dal-Re, & Ioannidis, 2018).

The probability of an individual with PTSD ever receiving helpful treatment is a joint function of the probability that any one treatment professional will be helpful and the probability that a patient will continue to seek treatment after an earlier treatment failure. Questions in the WMH surveys about perceived helpfulness of initial and subsequent treatments of PTSD, as well as on a range of variables previously found to predict treatment outcomes (e.g., trauma type, socio-demographics, prior mental disorder, childhood adversities) provide a unique opportunity to examine predictors of both these components. We aimed to address gaps in the literature on PTSD treatment by cross-national investigation of 1) the perceived helpfulness of initial and subsequent efforts to obtain treatment for PTSD and probability of persistence in help-seeking after initially obtaining unhelpful treatment as the two main components in a patient eventually finding a treatment that they consider helpful.

METHODS

Samples

The World Health Organisation's (WHO) World Mental Health (WMH) surveys are a coordinated set of community surveys administered to probability samples of the non-institutionalized population in countries throughout the world (https://www.hcp.med.harvard.edu/wmh/; Kessler & Ustun, 2004). Data for the current report came from WMH surveys carried out in 16 countries - eight in countries classified by the World Bank as high-income (Argentina, Australia, Israel, Italy, Netherlands, Northern Ireland, Portugal, Saudi Arabia, Spain and United States) and six in countries classified as low- or middle- income (Brazil, Bulgaria, Colombia, Lebanon, Mexico and Romania). There were two surveys in Bulgaria, administered to separate samples in 2002-2006, and 2016-2017. Seventeen surveys were based on nationally representative household samples, whereas three were representative of

selected Metropolitan Areas (Sao Paolo Brazil; Medellin Colombia; Japan), one was representative of selected regions (Murcia Spain), and three were representative of all urbanized areas (Colombia, Mexico; Argentina). Response rates ranged from 45.9% (France) to 97.2% (Medellin) and averaged 68.1% across surveys (see eTable 1).

The interview schedule was developed in English and translated into other languages using a standardized WHO translation, back-translation and harmonization protocol (Harkness et al., 2008). Interviews were administered face-to-face in respondents' homes after obtaining informed consent using procedures approved by local Institutional Review Boards. Interviews were in two parts. Part I was administered to all respondents and assessed core DSM-IV mental disorders (n=109,869 respondents across all surveys). Part II assessed additional disorders and correlates and was administered to 100% of respondents who met lifetime criteria for any Part I disorder and a probability subsample of other Part I respondents (n=61,775). Part II respondents were weighted to adjust for differential probabilities of selection into Part II and deviations between the sample and population demographic-geographic distributions. This weight resulted in prevalence estimates of Part I disorders in the weighted Part II sample being identical to those in the Part I sample (Heeringa et al., 2008).

Measures

Post-traumatic stress disorder: Diagnoses were based on Version 3.0 of the WHO's Composite International Diagnostic Interview (CIDI; Kessler & Ustun, 2004) a fully-structured lay-administered diagnostic interview. DSM-IV criteria were used to define post-traumatic stress disorder (PTSD) along with a number of other anxiety disorders (generalized anxiety disorder, panic disorder, agoraphobia with or without panic disorder, specific phobia and social phobia,), mood disorders (major depressive disorder and bipolar disorder), and substance disorders

(alcohol and drug abuse and dependence). The assessment of PTSD began with a series of questions about lifetime exposure to a wide range of traumatic experiences. When more than one lifetime traumatic experiences was reported, PTSD was assessed twice: once for symptoms associated with the traumatic experience the respondent reported as having caused the most distress and impairment; and a second time for one randomly selected other traumatic experience. PTSD was assessed only once among respondents who reported having only one traumatic experience in their life and not at all among respondents who never had a traumatic experience. Clinical reappraisal interviews were carried out in a number of WMH surveys using the lifetime non-patient version of the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 2002) as the gold standard. Good agreement was found between diagnoses of PTSD based on the CIDI and on blinded SCID clinician-administered reappraisal interviews (AUC=.69, positive predictive value [PPV]=.86; Haro et al., 2006).

Helpful treatment: Respondents who met lifetime DSM-IV/CIDI criteria for PTSD were asked retrospectively about age-of-onset and were then asked whether they ever "talk(ed) to a medical doctor or other professional about" their PTSD and, if so, how old they were the first time they talked to a professional about their PTSD. "Other professionals" were defined broadly to include "psychologists, counselors, spiritual advisors, herbalists, acupuncturists, and other healing professionals." Respondents answering yes were then asked whether they ever got treatment for their PTSD "that you considered <u>helpful</u> or <u>effective</u> *(emphasis in original)*." If so, they were asked how many professionals they ever talked to about their PTSD "up to and including the first time you ever got helpful treatment." Respondents who said they never got helpful treatment, in comparison, were asked how many professionals they ever talked to about their PTSD.

Predictors of helpful treatment: *Socio-economic characteristics* included age at first PTSD treatment (continuous), sex, marital status (married, never married, previously married), and education (in quartiles defined by within-country distributions). *Lifetime comorbid conditions* included number of anxiety, mood, and substance use disorders with first onsets prior to the age the respondent first sought treatment. *Treatment type* was defined as the cross-classification of variables for: (i) whether the respondent reported receiving medication, talk therapy, or both, as of the age of first PTSD treatment; and; (ii) types of treatment providers seen as of that age, including mental health specialists (psychiatrist, psychiatric nurse, psychologist, psychiatric social worker, mental health counselor) with or without pharmacotherapy, primary care providers, human services providers (social worker or counselor in a social services agency, spiritual advisor), and complementary/alternative medicine (other type of healer or self-help group). *Treatment timing* included a dichotomous measure for whether the respondent's first attempt to seek treatment occurred before 2000 or subsequently and a continuous variable for length of delay in years between age-of-onset of PTSD and age of initially seeking treatment.

Analysis methods

The sample for analysis was limited to people with onset of lifetime DSM-IV PTSD treatment on or after 1990 in order to minimise potential effects of recall bias. The probability of obtaining helpful treatment is a joint function of the probability that any one treatment provider will be helpful and the probability that a patient will continue to seek treatment after an initial treatment failure. In order to investigate these two components separately, we used discrete-event survival analysis to calculate the conditional and cumulative probabilities of: (i) obtaining helpful treatment after seeing between one and five professionals; and (ii) persisting in seeking treatment from up to five professionals after failing to obtain helpful treatment from the previous

professional(s) seen (Halli & Rao, 1992). We then carried out parallel discrete-event survival analyses of the predictors of these two component outcomes using standard discrete-time methods and a logistic link function (Willett & Singer, 1993). Because the WMH sample designs used weighting and clustering, all statistical analyses were carried out using the Taylor series linearization method (Wolter, 1985), a design-based method implemented in the SAS 9.4 program (SAS Institute Inc., 2016). Logistic regression coefficients and +/- 2 of their design-based standard errors were exponentiated to create odds-ratios (ORs) and 95% confidence intervals (CIs). Significance tests of sets of coefficients were made using Wald χ^2 tests based on design-corrected coefficient variance-covariance matrices. Statistical significance was evaluated consistently using two-sided design-based .05 level tests.

RESULTS

PTSD prevalence and treatment

Lifetime prevalence of PTSD was 4.9% in high income countries, 2.3% in low/middle income countries, and 4.2% in the total sample. (Table 1) Among respondents with lifetime PTSD, 25.5% in high income countries ever sought treatment compared to 6.8% in low/middle income countries and 23.0% in the total sample. Roughly half these patients (52.8%) reported that treatment was helpful. This proportion did not differ significantly between high and low/middle income countries (53.1% vs. 43.8%, χ^2_1=0.9, p=0.33).

(Table 1 about here)

Helpful PTSD treatment across professionals seen

Probability of obtaining helpful PTSD treatment from the first professional seen was 22.2% in the total sample. (Table 2) Conditional probabilities of subsequent professionals being helpful if they were seen after earlier unhelpful treatments were in the range 22.7-32.7% and did

not vary significantly depending on number of prior unhelpful treatments (χ^2_3=1.3, p=0.73). These proportions were very similar in high income vs. low/middle income countries.

(Table 2 about here)

Survival analysis based on these conditional probabilities suggests that the cumulative probability of receiving helpful treatment from at least one treatment provider would increase from 22.2% after the first professional seen to 47.6% if all patients continued to a second provider after a first treatment failure. This estimated cumulative probability would increase to an estimated 95.5% if all patients persevered in trying up to five professionals after earlier ones were unhelpful. These patterns were generally similar across country income levels.

Persistence with PTSD treatment seeking following earlier unhelpful treatment

In the total sample, 61.4% of patients who were not helped by the first professional seen persisted in seeing a second professional. Further persistence after unhelpful treatments from between 1 and 3 subsequent professionals was in the range 65.6-81.1% and varied significantly depending on number of prior unhelpful treatments (χ^2_2=8.3, p=0.02). These proportions were very similar in high income vs. low/middle income countries.

(Table 3 about here)

However, not all patients persisted after each unhelpful attempt. Survival analysis based on the conditional probabilities suggests that the cumulative probability of persisting with up to five professionals in the face of prior treatments being unhelpful would be 23.1% in the total sample. Again patterns were generally similar across country income levels.

Predictors of helpful PTSD treatment

We noted above that 52.8% of the patients who sought treatment for their PTSD reported that they received helpful treatment. Logistic regression analysis at the person-level (i.e.,

ignoring the number of treatment providers consulted) pooled across this entire sample adjusting for between-country differences found that odds of obtaining helpful treatment was not significantly related to any of the socio-demographic variables considered (age of first PTSD treatment, sex, marital status at the time of initiating treatment, education level at the time of initiating treatment) or to the type of traumatic experience that caused the PTSD. (Table 4) However, five other predictors were significant. Length of delay in seeking treatment after onset of PTSD was inversely related to odds of treatment being helpful. Patients who first obtained treatment in 2000 or later were significantly less likely than those whose treatment began in earlier years to report obtaining helpful treatment. Treatment type was important: the highest odds of helpful treatment was associated with specialty mental health treatment and psychotropic medications and the lowest with treatment in the human services sector. Comorbid anxiety disorders were important, although this association was due to patients with exactly 2 but not 3+ other prior anxiety disorder being associated with low odds of PTSD treatment being helpful. And patients with a history of childhood adversity were less likely to obtain helpful treatment.

(Table 4 about here)

Decomposition showed that the pathways accounting for these significant associations varied considerably. In the case of delays in seeking treatment, the predictor was associated with both significantly decreased odds of a particular treatment provider being helpful and significantly decreased odds of persisting in seeking help from an additional provider after earlier unhelpful treatments. Historical time (i.e., 2000+ vs. 1999 or earlier), type of treatment received, and prior comorbid anxiety disorders, in comparison, were all non-significant predictors of a particular treatment provider being helpful, but significant predictors of persistence of seeking help after earlier unhelpful treatments. Childhood adversities, finally, were

associated with both significantly decreased odds of a particular treatment provider being helpful and significantly decreased odds of persisting in seeking help.

We carried out additional analyses to determine whether these significant predictors varied in importance between high and low/middle income countries, but none was statistically significant, although it needs to be noted that the number of patients in low/middle income countries was too small for powerful analyses of these interactions. We also investigated the possibility of time trends in the significant associations but only one emerged as significant at the .05 level: a strong association between childhood adversities and decreased odds of treatment being helpful.

Discussion

Several limitations of this study deserve emphasis; in particular assessment of key features of PTSD treatment and treatment response is based on sparse information. Respondent judgments of the helpfulness of PTSD treatment were uncorroborated, uncontrolled, and retrospective. More in-depth and formal measures of patient perceptions of care are available (Oades, Law, & Marshall, 2011; Uttaro, 2003), and only controlled trials using validated outcome measures can determine efficacy and effectiveness of such care. Telescoping (dating past events as occurring more recently than they did) might have led to inaccuracy in estimates of the timing of treatment (Barsky, 2002), although we restricted the sample to those with onset of PTSD treatment no earlier than 1990 to help address limitations of recall. In addition, assessment of the precise nature of PTSD treatment and its quality was limited to a small number of superficial questions, such as whether and when respondents "talk(ed) to a professional about their PTSD." Furthermore, assessment of PTSD symptoms at the time of treatment was not undertaken. While findings here are therefore quite different in scope from those obtained from

randomized controlled trials (RCTs) of PTSD interventions, they are important precisely because they address questions which that literature cannot.

This is the first cross-national epidemiological study on perceived helpfulness of PTSD treatment. Encouragingly, across the world, the slight majority (52.8%) of respondents with lifetime PTSD report treatment as helpful. And, importantly, we estimated that the vast majority (95.5%) would have experienced treatment as helpful if they had persevered in trying up to five professionals. However, most patients are not helped by the first treatment received and many of these patients fail to persist in their help-seeking efforts, resulting in the proportions of patients helped being only slightly more than half of what it could be. The first of these results is consistent with RCTs of PTSD treatment, which demonstrate that even though a number of PTSD interventions are efficacious non-response rates are comparatively high and treatment effect sizes are comparatively low (Charney, Hellberg, Bui, & Simon, 2018; Difede, Olden, & Cukor, 2014). However, we are unaware of previous research that has investigated the issue of persistence in help-seeking. It is encouraging that across all countries, 61.4% of patients who were not helped by the first professional seen persisted in seeing another professional. Still, not all people persisted after each unhelpful attempt and we estimated that the cumulative probability of persisting with up to five professionals needed was only 23.1%. Although our projections require the assumption that people who do not persist with treatment would have had comparable outcomes to those who do, on the basis of these findings we would argue that clinical treatment guidelines for PTSD should strongly encourage clinicians and patients to persist with treatment. Similarly, conceptual frameworks to enhance person-centered PTSD care should be expanded to include factors addressing treatment motivations and expectations (Etingen et al., 2019; Sharma, Bamford, & Dodman, 2015).

The data reported here on the predictors of helpfulness with PTSD treatment are also of interest in delineating the pathways that account for the helpfulness of individual clinical encounters and persistence in seeking help after initial unhelpful encounters. Delayed treatment seeking and childhood adversity were significant predictors of a particular PTSD treatment not being helpful as well as of lower persistence with help-seeking after unhelpful treatment. In contrast, historical time (2000+ vs 1999 or earlier), type of treatment received (mental health and psychotropics vs treatment in the human services sector), and prior comorbid anxiety disorders predicted obtaining helpful treatment despite not being associated with a particular treatment provider being helpful because they predicted persistence in help-seeking after earlier unhelpful treatments.

These findings are partially consistent with clinical studies of treatment response in PTSD, some of which have found a relationship between childhood adversity and worse outcome (Marshall et al., 1998), but they provide novel findings, such as those regarding delayed initiation of help-seeking, and generate hypotheses about mechanisms that deserve further investigation as potential intervention targets. Thus, for example, it is possible that persisting with treatment is associated with more severe symptoms (those which require medication), and that persistence across treatment professionals equates to persisting until an adequate "dose" has been received. The finding that those who received treatment as of 2000 were less likely to persist with treatment suggests that additional efforts may need to be devoted to psychoeducation efforts that emphasize that the best PTSD treatment still requires a trial-and-error approach and great persistence. Increased treatment rates, without increased persistence rates, will not decrease prevalence optimally.

The findings here are relevant to a number of currently topical discussions in global health, including those on the scale-up of efficacious treatment (Patel et al., 2018) and those on precision medicine (Seymour et al., 2017). Given the treatment gap for common mental disorders such as PTSD, global mental health implementation science has investigated how best to scale-up efficacious interventions such as those outlined in mhGAP; it is crucial that interventions are acceptable and accessible, and that quality controls ensure fidelity (Stein, Bass, Hofmann, 2019). Advances in data science have suggested that techniques such as machine learning may be useful in advancing precision psychiatry for a range of disorders, including PTSD; this may allow clinicians to reduce the extent to which treatment approaches rely on trial-and-error, and to develop more individually targeted treatment strategies (Kessler, Bossarte, Luedtke, Zaslavsky, & Zubizarreta, 2019). Measurement-based care and shared decision-making may also enhance patient-centered care of common mental disorders, including PTSD (Fortney et al., 2017).

In summary, these data on PTSD treatment from the WMHS are encouraging in emphasizing how often treatment of PTSD is perceived as helpful in the community, but they also emphasize the need for more effective PTSD interventions. From a public health perspective the findings here are consistent with calls for both scale-up of efficacious interventions for common mental disorders, as well as with calls for improved treatment targeting in mental health practice. The estimation that across the world, with persistence in treatment, the vast majority of people with PTSD should eventually perceive treatment as helpful, is a novel one and may usefully inform current treatment guidelines. Further work is needed to determine the extent to which targeted interventions to improve PTSD treatment quality and persistence will improve outcomes.

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Table 1. Lifetime prevalence of DSM-IV post-traumatic stress disorder (PTSD), proportion of cases with lifetime PTS who obtained treatment, and proportion of treated cases who perceived treatment as helpful

	In the entire sample			Among respondents with lifetime PTS			Among cases that obtained lifetime PTS treatment[a]		
		% of PTS			% obtained treatment[a]			% perceived treatment as helpful[b]	
Category	**n**	**%**	**(SE)**	**n**	**%**	**(SE)**	**n**	**%**	**(SE)**
I. Low/middle income countries									
Low/middle income countries	15557	2.3	(0.1)	605	6.8	(1.2)	53	43.8	(9.2)
Colombia	2381	1.8	(0.4)	58	4.1	(3.1)	2	0.0	(0.0)
Sao Paulo, Brazil	2942	3.2	(0.2)	160	8.3	(3.0)	17	27.5	(14.4)
Bulgaria	2811	2.0	(0.3)	109	10.3	(2.8)	14	71.1	(15.7)
Lebanon	1031	3.4	(0.6)	70	2.5	(1.8)	2	100.0	(0.0)
Medellin, Colombia	1673	3.7	(0.6)	109	7.5	(2.6)	12	36.6	(16.0)
Mexico	2362	1.5	(0.3)	68	3.1	(1.8)	4	32.0	(22.9)
Romania	2357	1.2	(0.3)	31	6.9	(5.2)	2	65.8	(31.8)
χ^2_6		41.9*			6.9			1100.7*	
II. High-income countries									
High-income countries	46218	4.9	(0.1)	3349	25.5	(1.0)	829	53.1	(2.4)
Argentina	2116	2.8	(0.3)	122	19.9	(3.7)	26	75.4	(10.9)
Australia	8463	7.3	(0.4)	640	39.8	(2.6)	253	68.4	(3.7)
Belgium	1043	2.7	(0.5)	51	8.1	(3.1)	8	0.0	(0.0)
France	1436	3.9	(0.6)	98	25.2	(5.9)	29	0.0	(0.0)
Germany	1323	1.7	(0.3)	54	19.3	(7.0)	12	0.0	(0.0)
Israel	4859	1.6	(0.2)	73	12.0	(4.1)	8	47.3	(18.3)
Italy	1779	2.4	(0.6)	65	6.3	(2.6)	5	0.0	(0.0)
Japan	1682	1.3	(0.2)	38	16.7	(7.5)	4	67.4	(26.0)
Murcia, Spain	1459	2.8	(0.5)	65	19.1	(3.7)	16	84.9	(11.5)
Netherlands	1094	4.4	(0.8)	90	28.5	(7.8)	26	0.0	(0.0)
New Zealand	7312	6.1	(0.3)	828	19.1	(2.0)	168	40.2	(5.7)
Northern Ireland	1986	8.8	(0.7)	238	39.2	(4.3)	80	53.5	(7.1)
Portugal	2060	5.3	(0.5)	180	28.7	(4.4)	64	45.2	(6.9)
Spain	2121	2.2	(0.4)	85	16.6	(5.0)	23	0.0	(0.0)
United States	5692	6.9	(0.4)	602	16.0	(1.5)	104	42.3	(4.2)

Table 1 continued. Lifetime prevalence of DSM-IV post-traumatic stress disorder (PTS), proportion of cases with lifetime PTS who obtained treatment, and proportion of treated cases who perceived treatment as helpful

	In the entire sample			Among respondents with lifetime PTS			Among cases that obtained lifetime PTS treatment[a]		
	% of PTS			% obtained treatment[a]			% perceived treatment as helpful[b]		
	n	%	(SE)	n	%	(SE)	n	%	(SE)
Saudi Arabia	1793	3.6	(0.5)	120	2.4	(1.8)	3	100.0	(0.0)
χ^2_{15}		410.7*			130.3*			13181.4*	
III. Pooled countries									
All Countries	61775	4.2	(0.1)	3954	23.0	(0.9)	882	52.8	(2.3)
χ^2_{22}		597.0*			194.4*			14608.0*	
Low/middle income countries vs. High-income countries									
χ^2_1		145.5*			61.4*			0.9	

Abbreviations: PTS, post-traumatic stress; SE, standard error.
[a]Cases are based on three conditions: (i) Respondents obtained PTS treatment; (ii) Year of first PTS treatment >= 1990; and (iii) Age at onset of PTS <= Year of first PTS treatment.
[b]Cases are based on four conditions: (i) Respondents obtained PTS treatment; (ii) Year of first PTS treatment >= 1990; (iii) Age at onset of PTS <= Year of first PTS treatment; and (iv) Respondents obtained helpful treatment.

Table 2. Conditional and cumulative probabilities of PTS treatment being perceived as helpful after each professional seen, among respondents with lifetime PTS who obtained treatment

	Treatment being perceived as helpful after the 1st professional seen			Treatment being perceived as helpful after the 2nd professional seen			Treatment being perceived as helpful after the 3rd professional seen			Treatment being perceived as helpful after the 4th professional seen			Treatment being perceived as helpful after the 5th professional seen		
	n	%	(SE)	n	%	(SE)	n	%	(SE)	n	%	(SE)	n	%	(SE)
I. Conditional probabilities															
High-income countries	829	21.9	(2.2)	395	33.2	(2.9)	183	32.5	(3.9)	93	30.4	(8.1)	55	23.2	(6.0)
Low/middle income countries	53	27.7	(2.4)	22	19.4	(6.0)	15	12.0	(1.1)	4	21.0	(16.6)	2	0.0	(0.0)
All	882	22.2	(2.1)	417	32.7	(2.8)	198	31.4	(3.7)	97	30.1	(7.9)	57	22.7	(5.8)
II. Cumulative probabilities															
High-income countries	829	21.9	(2.2)	829	47.8	(2.9)	829	64.8	(3.0)	829	75.5	(3.0)	829	95.5	(1.7)
Low/middle income countries	53	27.7	(2.4)	53	41.7	(10.2)	53	48.7	(10.9)	53	59.5	(15.2)	53	100.0	(0.0)
All	882	22.2	(2.1)	882	47.6	(2.8)	882	64.1	(2.9)	882	74.9	(3.0)	882	95.5	(1.7)

Abbreviations: PTS, post-traumatic stress; SE, standard error.

Table 3. Conditional and cumulative probabilities of persistence with treatment after previous unhelpful attempts, among respondents with lifetime DSM-IV PTS who obtained treatment

	Saw the 2nd professional			Saw the 3rd professional			Saw the 4th professional			Saw the 5th professional		
	Not helped by the 1st professional they saw			Not helped by the 2nd professional they saw			Not helped by the 3rd professional they saw			Not helped by the 4th professional they saw		
	n	%	(SE)	n	%	(SE)	n	%	(SE)	n	%	(SE)
I. Conditional probabilities												
High-income countries	683	61.5	(2.0)	263	70.0	(3.1)	132	68.2	(3.6)	70	81.8	(4.6)
Low/middle income countries	36	58.0	(4.0)	18	84.1	(3.3)	13	27.3	(4.8)	3	57.9	(0.0)
All	719	61.4	(1.9)	281	70.6	(3.0)	145	65.6	(3.5)	73	81.1	(4.4)
II. Cumulative probabilities												
High-income countries	683	61.5	(2.0)	683	43.1	(2.7)	683	29.4	(2.5)	683	24.1	(2.6)
Low/middle income countries	36	58.0	(4.0)	36	48.8	(11.0)	36	13.3	(6.9)	36	7.7	(5.4)
All	719	61.4	(1.9)	719	43.4	(2.6)	719	28.4	(2.4)	719	23.1	(2.5)

Abbreviations: PTS, post-traumatic stress; SE, standard error.

Table 4. Predictors of helpful treatment and persistence (pooled across professionals seen), and predictors of perceived helpfulness of treatment (person level), among people with lifetime DSM-IV PTS disorder

	Model 1: Predicting helpful treatment pooled across professionals seen				Model 2: Predicting persistence pooled across treatment failure				Model 3: Predicting perceived helpfulness of treatment across people with PTS			
	Prevalence		Multivariate		Prevalence		Multivariate		Prevalence		Multivariate	
	Mean/%	(SE)	AOR	95% CI	Mean/%	(SE)	AOR	95% CI	Mean/%	(SE)	AOR	95% CI
Age at first post-traumatic stress treatment	34.8	(0.6)	1.01	(1.00-1.03)	35.1	(0.7)	1.00	(0.98-1.01)	35.7	(0.5)	1.00	(0.98-1.02)
χ^2_1				3.03				0.28				0.01
Female	67.5	(2.6)	1.04	(0.72-1.51)	66.4	(2.6)	0.91	(0.60-1.38)	70.1	(2.3)	1.31	(0.77-2.22)
χ^2_1				0.05				0.18				0.99
Marital status												
Never married	39.8	(2.2)	1.43	(0.97-2.13)	38.6	(2.3)	0.76	(0.48-1.22)	40.3	(1.9)	0.91	(0.54-1.54)
Previously married	29.8	(2.6)	1.21	(0.79-1.83)	30.6	(2.7)	0.92	(0.58-1.47)	29.1	(2.0)	1.08	(0.63-1.85)
χ^2_2				3.54				1.30				0.29
Education												
Low	8.8	(1.0)	0.59	(0.34-1.03)	9.8	(1.1)	0.69	(0.36-1.34)	10.2	(0.9)	0.44*	(0.23-0.87)
Low-average	25.9	(2.4)	0.86	(0.55-1.35)	25.6	(2.5)	1.12	(0.70-1.80)	25.7	(2.0)	0.86	(0.49-1.49)
High-average	33.3	(2.1)	0.76	(0.50-1.17)	34.1	(2.3)	0.92	(0.61-1.40)	31.5	(1.9)	0.60*	(0.38-0.95)
Student	11.5	(1.4)	0.79	(0.44-1.44)	10.9	(1.6)	1.39	(0.65-2.95)	10.4	(1.2)	0.86	(0.38-1.98)
χ^2_4				4.46				3.46				9.22
Treatment delay (years)[a]	9.5	(0.7)	0.98*	(0.97-1.00)	10.0	(0.8)	0.99*	(0.97-1.00)	9.4	(0.5)	0.98*	(0.96-1.00)
χ^2_1				6.76*				4.26*				4.95*
Started PTS treatment ≥ 2000 (vs. 1990-1999)	58.9	(2.1)	0.79	(0.58-1.07)	60.1	(2.2)	0.50*	(0.33-0.76)	61.9	(1.9)	0.48*	(0.31-0.73)
χ^2_1				2.30				10.61*				11.73*
Treatment type[b]												
Mental health specialist + Psychotherapy	43.6	(1.9)	1.19	(0.77-1.84)	45.2	(1.9)	1.35	(0.77-2.37)	44.3	(1.9)	1.26	(0.72-2.18)
Mental health specialist + Medication	65.8	(2.3)	1.36	(0.76-2.44)	65.2	(2.4)	1.81*	(1.23-2.65)	59.9	(2.2)	2.24*	(1.25-4.00)
Human services	22.8	(2.4)	0.80	(0.53-1.23)	23.4	(2.6)	0.68	(0.45-1.04)	21.7	(1.9)	0.60*	(0.37-0.95)
General medical	80.6	(1.6)	0.67*	(0.48-0.95)	81.7	(1.6)	1.54	(0.95-2.47)	77.4	(1.6)	0.88	(0.53-1.48)

Table 4 continued. Predictors of helpful treatment and persistence (pooled across professionals seen), and predictors of perceived helpfulness of treatment (person level), among people with lifetime DSM-IV PTS disorder

	Model 1: Predicting helpful treatment pooled across professionals seen				Model 2: Predicting persistence pooled across treatment failure				Model 3: Predicting perceived helpfulness of treatment across people with PTS			
	Prevalence		Multivariate		Prevalence		Multivariate		Prevalence		Multivariate	
	Mean/%	(SE)	AOR	95% CI	Mean/%	(SE)	AOR	95% CI	Mean/%	(SE)	AOR	95% CI
Complementary/alternative medicine	25.6	(1.9)	1.00	(0.67-1.48)	26.3	(2.0)	0.87	(0.57-1.31)	23.6	(1.8)	0.98	(0.58-1.66)
χ^2_5				9.82				19.93*				13.07*
Exactly 2 or more of the above	74.1	(2.1)	0.66	(0.32-1.35)	74.7	(2.2)	1.19	(0.67-2.13)	68.9	(2.1)	0.88	(0.42-1.85)
χ^2_1				1.30				0.36				0.11
χ^2_6				10.21				31.92*				20.60*
Number of lifetime anxiety disorders[c]												
3 or more lifetime anxiety disorders[c]	31.0	(2.3)	0.85	(0.60-1.19)	31.2	(2.3)	1.38	(0.91-2.11)	27.1	(1.8)	1.28	(0.81-2.00)
Exactly 2 lifetime anxiety disorders[c]	29.4	(2.1)	0.63*	(0.43-0.93)	30.9	(2.3)	0.72	(0.48-1.09)	30.5	(2.0)	0.52*	(0.33-0.82)
χ^2_2				6.23*				11.04*				17.65*
Mood disorder												
Major depressive disorder	48.8	(2.4)	1.01	(0.73-1.38)	49.3	(2.6)	1.21	(0.82-1.79)	48.1	(1.8)	1.15	(0.75-1.74)
Bipolar disorder	11.9	(1.5)	1.16	(0.64-2.11)	12.3	(1.7)	1.02	(0.61-1.69)	11.2	(1.3)	0.88	(0.47-1.64)
χ^2_2				0.26				1.12				0.91
Substance use disorder												
Alcohol and/or drug abuse	34.6	(2.5)	0.96	(0.69-1.34)	35.2	(2.5)	1.30	(0.90-1.88)	30.1	(2.2)	1.16	(0.76-1.76)
Alcohol or drug dependence but not abuse	2.4	(0.5)	1.75	(0.66-4.60)	2.3	(0.5)	1.36	(0.76-2.44)	2.5	(0.5)	1.54	(0.54-4.35)
χ^2_2				1.40				2.51				0.98
χ^2_6				8.32				15.65*				22.41*
PTSD events												
Exposure to organized violence[d]	16.0	(1.8)	0.57*	(0.36-0.89)	17.4	(1.9)	1.20	(0.75-1.90)	13.8	(1.3)	0.73	(0.39-1.37)
Participation in organized violence[e]	42.5	(2.4)	1.15	(0.88-1.52)	42.8	(2.6)	1.07	(0.73-1.57)	40.3	(2.2)	1.13	(0.75-1.69)
Physical violence victimization[f]	31.9	(2.3)	0.52*	(0.37-0.74)	32.8	(2.4)	1.68*	(1.12-2.51)	25.8	(2.0)	0.79	(0.48-1.30)
Sexual violence victimization[g]	64.1	(2.0)	1.48*	(1.08-2.01)	63.5	(2.1)	1.00	(0.70-1.43)	62.9	(1.9)	1.38	(0.93-2.05)

Table 4 continued. Predictors of helpful treatment and persistence (pooled across professionals seen), and predictors of perceived helpfulness of treatment (person level), among people with lifetime DSM-IV PTS disorder

	Model 1: Predicting helpful treatment pooled across professionals seen				Model 2: Predicting persistence pooled across treatment failure				Model 3: Predicting perceived helpfulness of treatment across people with PTS			
	Prevalence		Multivariate		Prevalence		Multivariate		Prevalence		Multivariate	
	Mean/%	(SE)	AOR	95% CI	Mean/%	(SE)	AOR	95% CI	Mean/%	(SE)	AOR	95% CI
Accidents/injuries[h]	48.9	(2.4)	1.01	(0.68-1.50)	49.9	(2.6)	1.05	(0.73-1.50)	47.6	(1.9)	1.04	(0.68-1.59)
Other[j]	64.0	(2.4)	1.02	(0.75-1.38)	64.1	(2.6)	0.92	(0.63-1.34)	63.4	(2.0)	0.95	(0.61-1.47)
χ^2_6				26.09*				8.50				4.17
Childhood adversities												
Family dysfunction[j]	29.2	(1.4)	0.87	(0.66-1.15)	32.0	(1.5)	0.81	(0.58-1.13)	30.4	(1.4)	0.74	(0.49-1.10)
Other[k]	14.3	(1.1)	0.64*	(0.46-0.90)	16.3	(1.2)	0.52*	(0.38-0.72)	16.5	(1.1)	0.39*	(0.26-0.58)
χ^2_2				8.15*				18.89*				24.29*
Global χ^2_{30}				98.10*				184.34*				100.12*

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval; PTS, post-traumatic stress; SE, standard error, PTSD, post-traumatic stress disorder.
*Significant at the .05 level, two sided test.
[a]Treatment delay (years) = Age at first PTS treatment – Age at onset of PTS.
[b]Treatment providers: mental health specialists (psychiatrist, psychiatric nurse, psychologist, psychiatric social worker, mental health counselor), primary care providers, human services providers (social worker or counselor in a social services agency, spiritual advisor), and complementary/alternative medicine (other type of healer or self-help group).
[c]LT anxiety disorders include generalized anxiety disorder, panic disorder, agoraphobia with or without panic disorder, posttraumatic stress disorder, specific phobia and social phobia.
[d]Exposure to organized violence includes relief worker in war zone, civilian in war zone, civilian in region of terror, refugee and kidnapped.
[e]Participation in organized violence includes witnessed death/dead body/serious injury, accidentally caused serious injury/death, combat experience, purposely injured/tortured/killed someone and witnessed atrocities.
[f]Physical violence victimization includes beaten by caregiver, beaten by someone else and witnessed physical fight at home.
[g]Sexual violence victimization includes raped, sexually assaulted, stalked, beaten by spouse/romantic partner, trauma to loved one, some other trauma and private trauma.
[h]Accidents/injuries includes natural disaster, toxic chemical exposure, automobile accident, life-threatening illness, child with serious illness and other life-threatening accident.
[i]Other includes mugged/threatened with a weapon, human-made disaster and unexpected death of a loved one.
[j]Family dysfunction includes physical abuse, sexual abuse, neglect, parent mental disorder, parent substance disorder, parent criminal behavior and family violence.
[k]Other includes parent died, parent divorced, other parent loss, physical illness and economic adversity.

eTable 1. WMH sample characteristics by World Bank income categories[a]

Country by income category	Survey[b]	Sample characteristics[c]	Field dates	Age range	Sample size			Response rate[e]
					Part I	Part II	Part II and age ≤ 44[d]	
I. Low and middle income countries								
Brazil - São Paulo	São Paulo Megacity	São Paulo metropolitan area.	2005-8	18-93	5,037	2,942	--	81.3
Bulgaria	NSHS 2002-6	Nationally representative.	2002-6	18-98	5,318	2,233	741	72.0
Bulgaria 2	NNSHS 2016-17	Nationally representative.	2016-17	18-91	1,508	578	--	61.0
Colombia	NSMH	All urban areas of the country (approximately 73% of the total national population).	2003	18-65	4,426	2,381	1,731	87.7
Colombia - Medellín	MMHHS	Medellín metropolitan area.	2011-12	19-65	3,261	1,673	--	97.2
Lebanon	LEBANON	Nationally representative.	2002-3	18-94	2,857	1,031	595	70.0
Mexico	M-NCS	All urban areas of the country (approximately 75% of the total national population).	2001-2	18-65	5,782	2,362	1,736	76.6
Romania	RMHS	Nationally representative.	2005-6	18-96	2,357	2,357	--	70.9
TOTAL					(30,546)	(15,557)	(4,803)	77.2
II. High-income countries								
Argentina	AMHES	Eight largest urban areas of the country (approximately 50% of the total national population).	2015	18-98	3,927	2,116	--	77.3
Australia[f]	NSMHWB	Nationally representative.	2007	18-85	8,463	8,463	--	60
Belgium	ESEMeD	Nationally representative. The sample was selected from a national register of Belgium residents.	2001-2	18-95	2,419	1,043	486	50.6
France	ESEMeD	Nationally representative. The sample was selected from a national list of households with listed telephone numbers.	2001-2	18-97	2,894	1,436	727	45.9
Germany	ESEMeD	Nationally representative.	2002-3	19-95	3,555	1,323	621	57.8
Israel	NHS	Nationally representative.	2003-4	21-98	4,859	4,859	--	72.6
Italy	ESEMeD	Nationally representative. The sample was selected from municipality resident registries.	2001-2	18-100	4,712	1,779	853	71.3
Japan	WMHJ 2002-6	Eleven metropolitan areas.	2002-6	20-98	4,129	1,682	--	55.1
Netherlands	ESEMeD	Nationally representative. The sample was selected from municipal postal registries.	2002-3	18-95	2,372	1,094	516	56.4
New Zealand[f]	NZMHS	Nationally representative.	2004-5	18-98	12,790	7,312	--	73.3
Northern Ireland	NISHS	Nationally representative.	2005-8	18-97	4,340	1,986	--	68.4
Portugal	NMHS	Nationally representative.	2008-9	18-81	3,849	2,060	1,070	57.3
Saudi Arabia[f]	SNMHS	Nationally representative	2013-16	18-65	3,638	1,793	--	61.0
Spain	ESEMeD	Nationally representative.	2001-2	18-98	5,473	2,121	960	78.6

eTable 1 continued. WMH sample characteristics by World Bank income categories[a]

Country by income category	Survey[b]	Sample characteristics[c]	Field dates	Age range	Sample size: Part I	Sample size: Part II	Sample size: Part II and age ≤ 44[d]	Response rate[e]
Spain - Murcia	PEGASUS- Murcia	Murcia region. Regionally representative.	2010-12	18-96	2,621	1,459	--	67.4
United States	NCS-R	Nationally representative.	2001-3	18-99	9,282	5,692	3,197	70.9
TOTAL					(79,323)	(46,218)	(8,430)	65.1
III. TOTAL					(109,869)	(61,775)	(13,233)	68.1

[a]The World Bank (2012) Data. Accessed May 12, 2012 at: http://data.worldbank.org/country. Some of the WMH countries have moved into new income categories since the surveys were conducted. The income groupings above reflect the status of each country at the time of data collection. The current income category of each country is available at the preceding URL.

[b]NSHS (Bulgaria National Survey of Health and Stress); NSMH (The Colombian National Study of Mental Health); MMHHS (Medellín Mental Health Household Study); LEBANON (Lebanese Evaluation of the Burden of Ailments and Needs of the Nation); M-NCS (The Mexico National Comorbidity Survey); RMHS (Romania Mental Health Survey); AMHES (Argentina Mental Health Epidemiologic Survey); NSMHWB (National Survey of Mental Health and Wellbeing); ESEMeD (The European Study Of The Epidemiology Of Mental Disorders); NHS (Israel National Health Survey); WMHJ2002-2006 (World Mental Health Japan Survey); NZMHS (New Zealand Mental Health Survey); NISHS (Northern Ireland Study of Health and Stress); NMHS (Portugal National Mental Health Survey); SNMHS (Saudi National Mental Health Survey); PEGASUS-Murcia (Psychiatric Enquiry to General Population in Southeast Spain-Murcia);NCS-R (The US National Comorbidity Survey Replication).

[c]Most WMH surveys are based on stratified multistage clustered area probability household samples in which samples of areas equivalent to counties or municipalities in the US were selected in the first stage followed by one or more subsequent stages of geographic sampling (e.g., towns within counties, blocks within towns, households within blocks) to arrive at a sample of households, in each of which a listing of household members was created and one or two people were selected from this listing to be interviewed. No substitution was allowed when the originally sampled household resident could not be interviewed. These household samples were selected from Census area data in all countries other than France (where telephone directories were used to select households) and the Netherlands (where postal registries were used to select households). Several WMH surveys (Belgium, Germany, Italy, Spain-Murcia) used municipal, country resident or universal health-care registries to select respondents without listing households. The Japanese sample is the only totally un-clustered sample, with households randomly selected in each of the 11 metropolitan areas and one random respondent selected in each sample household. 17 of the 24 surveys are based on nationally representative household samples.

[d]Argentina, Australia, Brazil, Bulgaria 2 (2016-17), Colombia-Medellin, Israel, Japan, New Zealand, Northern Ireland, Romania, Saudi Arabia and Spain-Murcia did not have an age restricted Part 2 sample. All other countries were age restricted to ≤ 44.

[e]The response rate is calculated as the ratio of the number of households in which an interview was completed to the number of households originally sampled, excluding from the denominator households known not to be eligible either because of being vacant at the time of initial contact or because the residents were unable to speak the designated languages of the survey. The weighted average response rate is 68.1%.

[f]For the purposes of cross-national comparisons we limit the sample to those 18+.

eTable 2. Predictors of helpful treatment and persistence (pooled across professionals seen), and predictors of perceived helpfulness of treatment (person level), among people with lifetime DSM-IV PTS disorder (included only significant predictors from Table 4)

	Model 1: Predicting helpful treatment pooled across professionals seen				Model 2: Predicting persistence pooled across treatment failure				Model 3: Predicting perceived helpfulness of treatment across people with PTS			
	Prevalence		Multivariate		Prevalence		Multivariate		Prevalence		Multivariate	
	Mean/%	(SE)	AOR	95% CI	Mean/%	(SE)	AOR	95% CI	Mean/%	(SE)	AOR	95% CI
Age at first post-traumatic stress treatment	34.8	(0.6)	1.01	(1.00-1.02)	35.1	(0.7)	0.99	(0.98-1.00)	35.7	(0.5)	1.00	(0.99-1.01)
χ^2_1				1.82				1.28				0.04
Treatment delay (years)[a]	9.5	(0.7)	0.98*	(0.97-1.00)	10.0	(0.8)	0.99*	(0.97-1.00)	9.4	(0.5)	0.98*	(0.96-1.00)
χ^2_1				6.95*				4.05*				5.82*
Started PTS treatment ≥ 2000 (vs. 1990-1999)	58.9	(2.1)	0.84	(0.62-1.13)	60.1	(2.2)	0.50*	(0.33-0.76)	61.9	(1.9)	0.48*	(0.31-0.75)
χ^2_1				1.30				10.49*				10.40*
Treatment type[b]												
Mental health specialist + Psychotherapy	43.6	(1.9)	1.01	(0.68-1.50)	45.2	(1.9)	1.48	(0.92-2.36)	44.3	(1.9)	1.19	(0.75-1.89)
Mental health specialist + Medication	65.8	(2.3)	1.07	(0.73-1.57)	65.2	(2.4)	1.98*	(1.44-2.72)	59.9	(2.2)	2.03*	(1.32-3.13)
Human services	22.8	(2.4)	0.79	(0.51-1.20)	23.4	(2.6)	0.72	(0.48-1.10)	21.7	(1.9)	0.60*	(0.36-0.98)
General medical	80.6	(1.6)	0.61*	(0.44-0.83)	81.7	(1.6)	1.75*	(1.13-2.70)	77.4	(1.6)	0.88	(0.50-1.52)
Complementary/alternative medicine	25.6	(1.9)	0.96	(0.65-1.41)	26.3	(2.0)	0.90	(0.61-1.33)	23.6	(1.8)	1.01	(0.61-1.66)
χ^2_5				9.90				38.33*				19.90*
Number of lifetime anxiety disorders[c]												
3 or more lifetime anxiety disorders[c]	31.0	(2.3)	0.91	(0.65-1.27)	31.2	(2.3)	1.47	(0.97-2.24)	27.1	(1.8)	1.35	(0.86-2.11)
Exactly 2 lifetime anxiety disorders[c]	29.4	(2.1)	0.63*	(0.43-0.93)	30.9	(2.3)	0.73	(0.49-1.08)	30.5	(2.0)	0.53*	(0.33-0.85)
χ^2_2				8.00*				12.14*				19.19*
PTSD events												
Exposure to organized violence[d]	16.0	(1.8)	0.56*	(0.35-0.89)	17.4	(1.9)	1.21	(0.79-1.85)	13.8	(1.3)	0.77	(0.41-1.43)
Participation in organized violence[e]	42.5	(2.4)	1.20	(0.90-1.60)	42.8	(2.6)	1.17	(0.80-1.73)	40.3	(2.2)	1.11	(0.75-1.65)
Physical violence victimization[f]	31.9	(2.3)	0.51*	(0.36-0.73)	32.8	(2.4)	1.70*	(1.20-2.42)	25.8	(2.0)	0.74	(0.45-1.20)
Sexual violence victimization[g]	64.1	(2.0)	1.49*	(1.10-2.02)	63.5	(2.1)	0.98	(0.70-1.36)	62.9	(1.9)	1.46*	(1.00-2.13)
Accidents/injuries[h]	48.9	(2.4)	1.03	(0.72-1.47)	49.9	(2.6)	1.01	(0.70-1.46)	47.6	(1.9)	1.02	(0.67-1.53)

eTable 2 continued. Predictors of helpful treatment and persistence (pooled across professionals seen), and predictors of perceived helpfulness of treatment (person level), among people with lifetime DSM-IV PTS disorder (included only significant predictors from Table 4)

	Model 1: Predicting helpful treatment pooled across professionals seen				Model 2: Predicting persistence pooled across treatment failure				Model 3: Predicting perceived helpfulness of treatment across people with PTS			
	Prevalence		Multivariate		Prevalence		Multivariate		Prevalence		Multivariate	
	Mean/%	(SE)	AOR	95% CI	Mean/%	(SE)	AOR	95% CI	Mean/%	(SE)	AOR	95% CI
Other[i]	64.0	(2.4)	1.02	(0.76-1.38)	64.1	(2.6)	0.92	(0.62-1.34)	63.4	(2.0)	0.95	(0.62-1.44)
χ^2_6			26.08*				13.27*				5.36	
Childhood adversities												
Family dysfunction[j]	29.2	(1.4)	0.87	(0.66-1.13)	32.0	(1.5)	0.80	(0.59-1.10)	30.4	(1.4)	0.72	(0.49-1.07)
Other[k]	14.3	(1.1)	0.67*	(0.48-0.94)	16.3	(1.2)	0.51*	(0.38-0.70)	16.5	(1.1)	0.40*	(0.27-0.58)
χ^2_2			6.65*				23.56*				25.52*	
Global χ^2_{18}			70.40*				133.04*				81.75*	

Abbreviations. AOR, adjusted odds ratio; CI, confidence interval; PTS, post-traumatic stress; SE, standard error; PTSD, post-traumatic stress disorder.

*Significant at .05 level, two sided test.

[a]Treatment delay (years) = Age at first PTS treatment – Age at onset of PTS.

[b]Treatment providers: mental health specialists (psychiatrist, psychiatric nurse, psychologist, psychiatric social worker, mental health counselor), primary care providers, human services providers (social worker or counselor in a social services agency, spiritual advisor), and complementary/alternative medicine (other type of healer or self-help group).

[c]LT anxiety disorders include generalized anxiety disorder, panic disorder, agoraphobia with or without panic disorder, posttraumatic stress disorder, specific phobia and social phobia.

[d]Exposure to organized violence includes relief worker in war zone, civilian in war zone, civilian in region of terror, refugee and kidnapped.

[e]Participation in organized violence includes witnessed death/dead body/serious injury, accidentally caused serious injury/death, combat experience, purposely injured/tortured/killed someone and witnessed atrocities.

[f]Physical violence victimization includes beaten by caregiver, beaten by someone else and witnessed physical fight at home.

[g]Sexual violence victimization includes raped, sexually assaulted, stalked, beaten by spouse/romantic partner, trauma to loved one, some other trauma and private trauma.

[h]Accidents/injuries includes natural disaster, toxic chemical exposure, automobile accident, life-threatening illness, child with serious illness and other life-threatening accident.

[i]Other includes mugged/threatened with a weapon, human-made disaster and unexpected death of a loved one.

[j]Family dysfunction includes physical abuse, sexual abuse, neglect, parent mental disorder, parent substance disorder, parent criminal behavior and family violence.

[k]Other includes parent died, parent divorced, other parent loss, physical illness and economic adversity.

eTable 3. Interaction between main effects and historical time to predict helpful treatment and persistence (pooled across professionals seen), and predictors of perceived helpfulness of treatment (person level), among people with lifetime DSM-IV PTS disorder

	Model 1: Predicting helpful treatment pooled across professionals seen		Model 2: Predicting persistence pooled across treatment failure		Model 3: Predicting perceived helpfulness of treatment across people with PTS	
	Prevalence	Multivariate	Prevalence	Multivariate	Prevalence	Multivariate
	Mean/% (SE)	AOR 95% CI	Mean/% (SE)	AOR 95% CI	Mean/% (SE)	AOR 95% CI
Interaction terms between each predictor and historical time						
Treatment delay (years)[a]	6.4 (0.7)	0.99 (0.97-1.02)	7.0 (0.8)	0.96* (0.93-0.98)	6.8 (0.5)	0.97 (0.93-1.00)
χ^2_1		0.53		9.81*		3.59
Treatment type[b]						
Mental health specialist + Psychotherapy	22.7 (1.3)	1.33 (0.78-2.28)	24.1 (1.4)	0.32* (0.16-0.62)	26.6 (1.5)	0.65 (0.29-1.46)
Mental health specialist + Medication	37.0 (2.3)	1.31 (0.64-2.68)	37.1 (2.5)	0.73 (0.31-1.72)	36.5 (1.9)	1.06 (0.44-2.55)
Human services	14.0 (2.2)	1.04 (0.43-2.54)	14.9 (2.4)	0.71 (0.28-1.81)	14.2 (1.7)	0.90 (0.30-2.66)
General medical	45.7 (2.3)	0.72 (0.36-1.46)	47.8 (2.4)	0.91 (0.39-2.10)	45.7 (2.0)	0.61 (0.24-1.58)
Complementary/alternative medicine	13.8 (1.5)	0.84 (0.43-1.63)	14.9 (1.7)	0.37* (0.16-0.90)	14.4 (1.5)	0.40 (0.15-1.04)
χ^2_5		3.13		21.28*		6.52
Number of lifetime anxiety disorders[c]						
3 or more lifetime anxiety disorders[c]	19.4 (2.2)	1.04 (0.51-2.11)	20.0 (2.3)	1.39 (0.64-3.02)	18.1 (1.8)	1.06 (0.50-2.26)
Exactly 2 lifetime anxiety disorders[c]	18.0 (1.8)	0.77 (0.35-1.70)	19.2 (2.0)	1.51 (0.64-3.57)	19.2 (1.7)	1.16 (0.42-3.24)
χ^2_2		0.56		1.15		0.09
Childhood adversities						
Family dysfunction[d]	16.3 (1.1)	0.40* (0.25-0.65)	19.1 (1.2)	0.85 (0.38-1.89)	18.4 (1.1)	0.46* (0.21-0.99)
Other[e]	8.8 (0.7)	0.51* (0.28-0.91)	10.7 (0.9)	1.06 (0.52-2.16)	10.9 (0.9)	0.56 (0.26-1.19)
χ^2_2		20.23*		0.18		6.12*
Global χ^2_{10}		33.46*		30.97*		23.41*

Abbreviations. AOR, adjusted odds ratio; CI, confidence interval; PTS, post-traumatic stress; SE, standard error.

*Significant at .05 level, two sided test.

[a]Treatment delay (years) = Age at first PTS treatment – Age at onset of PTS.

[b]Treatment providers: mental health specialists (psychiatrist, psychiatric nurse, psychologist, psychiatric social worker, mental health counselor), primary care providers, human services providers (social worker or counselor in a social services agency, spiritual advisor), and complementary/alternative medicine (other type of healer or self-help group).

eTable 3 continued. Interaction between main effects and historical time to predict treatment and persistence (pooled across professionals seen), and predictors of perceived helpfulness of treatment (person level), among people with lifetime DSM-IV PTS disorder

[c]LT anxiety disorders include generalized anxiety disorder, panic disorder, agoraphobia with or without panic disorder, posttraumatic stress disorder, specific phobia and social phobia.
[d]Family dysfunction includes physical abuse, sexual abuse, neglect, parent mental disorder, parent substance disorder, parent criminal behavior and family violence.
[e]Other includes parent died, parent divorced, other parent loss, physical illness and economic adversity.